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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,944	07/31/2003	Shahriar Ahmed	42P10970D	4969

7590 09/22/2004
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Los Angeles, CA 90025

EXAMINER

ABRAHAM, FETSUM

ART UNIT	PAPER NUMBER
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2826

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/632,944

Applicant(s)

S.AHMED

Examiner

Fetsum Abraham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claims rejection

As a preliminary matter, a non-final rejection is hereby made based on the same patent recited in the first action to address the new ideas presented in this action which is slightly different from that presented in the first action. Therefore, no examiner's answer is provided to address the remarks of the applicant to give the same a chance to respond to this action.

As discussed by telephone on 9/17/04, Ms. Mimi Dao and examiner Abraham to correct the error in the claims had reached a mutual agreement. As a result the expression "process" has been added between the "A" and "comprising" in the first line of claims 3-6. The correction is expected to be made by the applicant in the next amendment/response for this action.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki (6,232,638).

The patent discloses a structure and a method of forming the same in figure 6(b) whereby an emitter stack (214) is formed between spaced-apart isolation regions (202), a self aligned recess in the substrate and between the emitter stack and the right hand side isolation layer (202), and a bipolar transistor formed in the space between the isolation structures (202).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki.

As for claims 2,5,6, a self-aligned collector tap (227) is formed at the interface between the layer (205) and the bottom portion of the recess. Although the tap is formed by diffusion method, it would have been obvious to one skilled in the art to implant the impurities that formed the tap by implantation means since the means is a commonly used alternative to diffusion notoriously used in the art because of its capacity to penetrate semiconductor layers and to deposit impurities faster than the method applied in the prior art to form the same.

As for claims 3,4,5, after carefully focusing on the way the structure was made, it seems apparent that similar masking process had been made to form the recess (see the patent literature concerning the steps in the making of figure 11 (d) from the initial structure in figure (11(a))). Clearly, anisotropic etching is involved to make the recess (see column 1, 57-65). Also note the resist (236) used for etching in the claimed portion of the prior art from figures 7(c and d).

As for claim 7, the diffused layer (227) is N+ collector tap.

As for claims 8-10, the collector region of the structure, although may not have been taught in the patent seems to be an epitaxial layer based on the regular practice of

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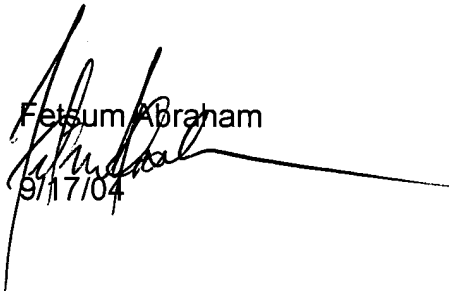
in such layers as known in the art, and the emitter electrode (316) on the collector layer is a polysilicon material, which is patterned from material (315) shown in figure 13 c.

As for claim 11, a portion of insulator (106) was cut off before the patterning process to make the emitter stack was performed.

As for claim 12, the collector tap is a buried layer from broader interpretation point of view.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fetsum Abraham whose telephone number is: 571-272-1911. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on 571-272-1915.


Fetsum Abraham
9/17/04